

- 1/24 -

SEQUENCE LISTING

<110> F. Hoffmann-La Roche AG
<120> ASSOCIATIONS OF POLYMORPHISMS IN THE FRZB GENE WITH OBESITY AND OSTEOPOROSIS
<130> 21634 WO
<150> US 60/464,372
<151> 2003-04-21
<150> US 60/526,689
<151> 2003-12-01
<160> 35
<170> PatentIn version 3.3
<210> 1
<211> 30000
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7061)..(7160)
<223> n is unidentified (a, c, g or t)

<220>
<221> misc_feature
<222> (7344)..(7344)
<223> n is unidentified (a, c, g or t)

<220>
<221> misc_feature
<222> (7438)..(7438)
<223> n is unidentified (a, c, g or t)

<220>
<221> misc_feature
<222> (7509)..(7608)
<223> n is unidentified (a, c, g or t)

<220>
<221> misc_feature
<222> (28902)..(28902)
<223> n is unidentified (a, c, g or t)

<220>
<221> misc_feature
<222> (28954)..(28954)
<223> n is unidentified (a, c, g or t)

<400> 1
gaattctaga tttgccatta attttgtaca ctgaactagt cgcttgacat tgacattcat 60
tagggattgt gaagaacaaa agaaatagta atatgaagtt actgataaac ggtaaaggcac 120
aatataaaatg tttaacaaca acgtcattgg ggagaggacg tgtcatcctc aggacaggaa 180

- 2/24 -

ccattagcaa cacaataaaa gcaaccaaca cttatgttct aggtgctgtc ctgagtgc	240
tttgcacatt cattattatt cccatttgg agaaaaggaa gccaaggcat atagagaagc	300
taagttactg tccaaatgg cagagctagt aagaaaaaga gaattcgaag cagagcctgt	360
tctacactac actttgtccc ttaagaaatg taattcctaa ctttctagag aatctgttat	420
tctttgccta gcagattgca gttaaaggaa caaagggttt ctcattgtat ttgaagtac	480
acttatctat ggcttaagag aataaaaggt ggcttctaga caatggattc aaagagataa	540
gagattctga cttcactgca attttgagat agtagagatt atacattcca gattctcatg	600
tccctagtc tccggctca gcatgccccca gcgtgaactc atcatttccc catagtc	660
cacttggttt tttctagtat ttctatatt gttgaaaggt accaccatac cttagtagtc	720
caggcctggg aggcagtctt tttttttttt ttttttttag acagtctcgc tctgtcactc	780
agactggagt gcagtggcgt gatctctgct cactgcaacc tctgcctcca aggttcaagc	840
aattctcctg tctcagccctc ctgagtagct gggactacag gtgcatttcca ccacgccccag	900
ctaatttttg tatttctgtt agagatgggt ttccatg ttggccaggc tggctcgaa	960
ctcctgacct cagatgatct gcctgccttg gcctcgact gctgagatta caggtgtgag	1020
tcaccatacc tggctgtggg aagcagtctt gattctaccc ttccatcat tccctcact	1080
caataggtat cacatgctgt tggctctact ctgactcaaa ttcccttctc tccctctcta	1140
atgctacttt cttagtttg accttaccat ttccatccag gattatggcc ataggatgt	1200
aatggctctt cttatctcca gtatccccc tccatattcc aatagacatt ttttctgaaa	1260
tgcaaatctt ttgcttaaaa tccttactaa taatataat ttccatattttt ggtatattgt	1320
tgttagaatt cctaagtttta actttctgac aataattttt tgatcaattha tttagaaatt	1380
tttggtttct gtcttacagt tctaacaatt gacttctaaag catttggaaa agcgtagaaa	1440
cattttccct tgaataagaa tggagaaggt aaaacactct cttggctta gctatccat	1500
agtgattccc ttccatccaaag caaagtttta ttttctac ttatccat ctttgcacaa	1560
taaacatttc aaatatgggc caatataatt ttccatccaa tgaagacatt atttttgtat	1620
gtatccatc acatgattat tcagaaatag aaaaaccact ggcacgttac tgtaatactt	1680
gggtacattt atcatgaata aatgtttgaa tataatggaaa gtatttagtaa ttaatagttt	1740
atgcccacgt tgagccaaat gttttagaat tagtgtttgt tacttgctta tctgtttgtt	1800
tgctgactgc tgcctttct tggatattgc tttttaata cttgctgatg attactaaac	1860
ctggggaaatg aattcattaa ttgtatattgt ggggttata gtcctaaaat agtattaaacc	1920

- 3/24 -

ccttgtttaa tttattcctg ataggaccta taaacaaaaa ggacaaagga agaatactat	1980
tttctcctag aataaataga ggcattaaat tagtttagca taaagtgtta ctacaaatgt	2040
aaaactctta tataaagtac taaattggag tgtcaataag gatatattgc taggtacagc	2100
atctctcagc acgggtttcc gctggtgcac tgttattcat tagaggctgc tttcttaatt	2160
agaacacaga aaacctttat cattactatt ttctggatt atggcatcct aaaaagaatc	2220
aatagcaatt tctaattatt gtcacatcta ttaattgcac tggcttgaat agtccctgaa	2280
tagtaggttt ctttctgtt gaagaattat ttagcctgca gttaaaggac atgagaatga	2340
tttctgagtg ttctgtttagg aactaaggat ttaaatatat accagttcag tgtgatatgt	2400
ccatttattg aagatgcgtt tggtttttt tttgtcatca agtcataagt gttggatgag	2460
tgcctaataat ttgcataaggc tttatcatga taggatgctt atcatttaca aattttgtga	2520
aattcaaata aattattaaa ttctaaaatt ttatgcacag ttgagtattc agaagagtat	2580
ttccttataa ccacatgaaa aaataagtct catccatact caacccatga atgataagaa	2640
tgccgacctc atgacgttaa taaaaatcta ctcccttcag acaattggat tcttacccaa	2700
atcaaacttg tgactgagtt agatttttat cttaggaat tcttgaata gatatgttat	2760
agttctttt tctgtcacct cctttcagat ttccstatgg attctagtaa cgaaaactgt	2820
agaggggcaa gcagtggtga gtatatcatt atcttcctgg tttcatttg tggcagatt	2880
agtcattgat gtaattttaga tacttaagtc attcatgggg aagcttgtgc cctacatttt	2940
acaagtaaac tttttaaaat tccctcattt atattaattt tattttaaa attagcacgt	3000
agtaaaattg gacttttatt tggacatata gtttggtaca gatgaatttt aatattatgt	3060
agagatttat gtaaccacca ccacatcagg atacagaaca attccatcac ctccaaaaac	3120
tccttcaagc tgtatccctt tataattaca agtttccct atcttcatcc actggcaatc	3180
actcatctt tctttatcac tatagttttc tctatttgag gttcgattgt ccatatagac	3240
agactgacag tacgccttg agacttaacc aattgctgca tatatcaatg gtgcattcct	3300
ttttattaca gaatattta ttacttggat gtagaccat ttgttcaccc attcactcct	3360
tcaaggaagt ttgggttgtc tccagtttg agcaatcgcg aatagagcta ctataaacat	3420
tccagtacag gttttgtgg gaatgtaaat ttttatttct ctaggctaaa taagtaggaa	3480
taggatcaact gggttatatg gtaagtataat gtttagctt gtaaaaaagt gccaaaactgt	3540
ttccaagatg gctgttcaat tttgtgctag taatgtataa gagttccagt tggcttat	3600
cttgcgagc cttggattt atcaatataat tttattgtta gccattttaa taggtatgt	3660
ataatagctc atcatggttt taaattgcat ttccctaatg gctaatgtg ctgaatacat	3720

- 4/24 -

tttcatgtgt ttatggcta tccacatata tgcttttgg taaaatgttc aataatttg 3780
ccccatttaa gttgggttgt tttcttaatg agttctgagg gttcttaca tattctggat 3840
acaaaaaaaaaca tctttggtt ttattcattt tctctattgt ttcactgttt tcaattttat 3900
tgattatttc cttctgcttg ctgccttag aggtttattt tgctttttct tttgtttctt 3960
agagtagaaag cttatattgt gtttgagac tttttttttt tttttgagat ggagtcttgc 4020
tctgttgccc aggctggagt gccgtgatgc aatctcagct caccacaacc tccacttcc 4080
gggttcaagc aattctgcct cagccctcca actagctagg attacaggtg tgcaccacca 4140
cacccagcta atttttgtat tattagtaga gacaagattt caccatgttgc cccagcttgt 4200
ctctaaacact tgatctcagg tgatccaccc accttggcct tacagagtgc tgggattaca 4260
cacgtgagcc accatgtccg gccaagaccc ttcttctaat ataatgtaat gctataaata 4320
cccatctaag aatgacttta gttgcacatctc acaaattttg atagtttcat ttttcttcag 4380
ttcaaaaatat ttatatttt tccttgatat ttcccttgac ttgtgcacatca tttgggatttt 4440
tgctgtttaa tttgctgctt tttgaggatt ttcccttattt ctgtgttattt ttcaaaattc 4500
tactgttgaa gaatataactt tgtgtgatTTT cagttttttt agatttatta aggtttattc 4560
tctgatccag gatataatct gtcttggta atgttccatg tacacttaga aaaaagagta 4620
ttttgctgtt ggggtggaaatg tcctttaat gtcaattcaa tttagttgat taataactgtt 4680

atttagttct ttatatttct tgctgatTTT ctgtctacta gatctattga ttaccgagag 4740
aagggtgatt aggtctccaa atattgtgga tttttctatt tctttttca gtctgtcagt 4800
tttgcttcattt gtatTTTgaa gctctgtttg gtacataactt gtttaatattt ttttatgtct 4860
tattggtgaa ttgatgtttt cattatgttag tgcccttta tccttggtaa ttttctctgc 4920
tctaaattat atttttctg atattgtat aggttaattca gctgtcattt gattagttt 4980
tgccaggcataa aactttttct atccacttt taacataactt aagtcattgt gtttaaata 5040
catttcttgtt agacatcata tagttggtc tttttaaaaaa aatccataact gttgatcttt 5100
gtcttttgat tggatgtttt tgaccatttg cagctaatgt agttattcat atttgtatTTT 5160
agatctactg ttatTTTttc tgtttgcc ctctcctttt tattcacatt ctcttcttcc 5220
ttttggatttgc tatctctctc tctctctc acacacacac acgtatgtga gatataatata 5280
tatcctcatg agataattttt atatttttc tttaacaat tacatatctt ttaaacaact 5340
tgaggagaat agtagcctac ttttttttca cagatgtttt aatttctattt attcttcctt 5400
cttttccaaatccataact tccttctggc attcttctc ttctgttctt cagacagaag 5460
ttctgtctga agaactttct taagtatTTT ttgtactgt tttaaagcag ttctgtcgcc 5520

- 5/24 -

aaaaacttct ttttccttt acctgaaaat atttcattt cacccattt cctaaaggat	5580
attttcactg catacagaat tctaggttg cagtagatcc agcacataaa aaatattcca	5640
cttccttctg gcttcaatgt ttctcatggg aaattggcag tcttgaaat aattgttcc	5700
ctgtaagtaa tacatcagtt ttcttgggt gcatttgatt ttttttcct gtgtcttgc	5760
tttttagtgc tttaattatt acatgtctgg gcattgattc ctttgagttt accctgttta	5820
gggttatctg agcttcttga atctataaat ttataatgtt agccaaatgg gagaagtgc	5880
taggaattat ttcttcaaataat acttgcttt tacacaatag tctcttctat gatgatata	5940
atgttagatc ttctgatatt gttccacagg cccagagag gctctgttaa tttttctcc	6000
taatctttt tctctttgtt ttagattagg taatttctat tggcctagcg acaagttcat	6060
tgactcttcc gttggcttgc ttcaatctcc tactctctga aacacatcca gatagtttt	6120
atttgttagt atattttca aagttaaaag ttccatttga ttcttcatta tattttgtat	6180
ttcttggta agactttcta tcttccattt tatttcaagg gtattcaccc ttaatttgc	6240
aggcatttta atcatagcta ccgtaaaagtc atctgtgtca cctaattgtc ttgtcccact	6300
caagtcaaca ttttttctc tacatcttca tgttagagt aattttgggt tgaatcctgg	6360
acattttgaa tatcatgcaaa taaagctttg ggtcttgc actttaagttt atatggaaaa	6420
tgctgatttt ctttttttaa tttagcaac agttaaccta gtaggatta ggctgcaaatt	6480
tctgactggc cttctgtggg ttgtgatttt aatgtcagtt ccatttccaa agccttcgaa	6540
gtaccccttca tatctatccc acatgtatac cactcagttt ccagtatgag gtcagagcaa	6600
tactttatcc tacagtgcag tttttgaaat ctgtgataca ctgtttatg tcagagtcac	6660
acatgcccag gggtgacttc agtagttcat aaacaacttt acaaaatcct ttcccaggct	6720
cctttatctc tctgatctcc cttgcacttt tcagttccctt ggaattcccc cgttttggc	6780
ctttggctag aaagctttat cctactctgt gatttgcctt ttgtgactgc tccttcctat	6840
ggggccaaat ggtggggagga cagagaaaaga gagagagaga caaagtaatg gggatttgcc	6900
ccagttttt ggaactacaa gtcctccaaat cagaggtaa gattctctcc ttcatcaaag	6960
ttttgggctc ctgagggtct cccttggc agccgttgct gttaccacag tcccaggatg	7020
cctggaggaa tggaatgcaaa gaggctgata tgttagagat nnnnnnnnnnnnnnnnnnn	7080
nn	7140
nn	7200
tactaaaattt atcccaaaaa ttgaagagga gggactctcc cccaaactcac tggcaggccaa	7260
gcatcataatcct gataccaaaaa tctgacaaca gacacaacag aaaataaaaat ttcaggccaa	7320

- 6/24 -

tatcattaat	gaacattgat	atanaaatca	tcaataaaat	acttccagc	cgaatccagc	7380
agcacatcat	aaaagtaatc	caccatgagc	aaggtaggctt	ccttcccaga	tgcaaggntg	7440
gttcacatat	gcaatcataa	atggtattct	cactaagaga	ctaagacaaa	acaatgatat	7500
ctcatgagnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	7560
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnng	attctacagt	7620
atgtatTTT	gtatatgcat	gtgacttcct	atgcTTTca	ttaggctgt	tatagcagta	7680
gttttca	ttaattgcta	tattgtattc	tatcattgaa	tgtggtacac	tttattcatt	7740
ctaatgttca	tggatatttg	ggttgtttc	agttttgtt	acaatgacta	atgctgcatt	7800
tatttctaca	atatgatagc	tgcgatgagt	accatataatt	ccatttca	ttcctgtagt	7860
atTTTgcact	gattttggtg	agtatgtcct	gccttataag	gtgtcttac	tgtggaaatg	7920
gaacatttat	tttattaagt	tgtaaataag	tttgaatata	caactttcat	tacattggaa	7980
cagtttctc	tgttgacttc	cactgaatct	tatcatggtg	atatgttga	tctgagggaa	8040
tgtctaccaa	aggtgtccca	acaaatattt	atcccattaa	atacataagt	aaattaaaaat	8100
tatTTtagaa	ttgtttgtt	actttatata	attgataatg	ttttcaata	tcatgaaaac	8160
agttggaaat	cattgctgtc	cagtaatgtt	gctattgaa	gggtcactcc	ttctattatg	8220
ttttctcaac	ccgaactgaa	aagctcattt	gtataaaaact	gcaattggtg	ggtaaaaatt	8280
tctggccaag	gacatgtata	tgttaccaat	ttgttccaaa	gttatggta	gagtaatata	8340
gcacttcaat	gtatgaaaga	aagaaaacac	atcaacaaca	ctatcaacaa	tataaaaaaa	8400
acagttcaac	atgtaaaact	acctagaacg	aatgtggtgt	tctcagagtc	agtgttact	8460
gttcgtctt	taaaaatgtt	ttccagttct	ctggcataat	gagagtgatg	aaaacaaata	8520
ggcaaaacca	aagctcattc	tgtttgtgaa	aaaaacacta	acatgttcac	atgttctgaa	8580
aaggaaatat	aatttgtca	cactcaaaaa	tttatgctt	ggagaaatgt	aacagctgag	8640
gttgatcatg	ataaaacagg	aaatgaggaa	ggcatgaaaa	cactgttaacc	cacataagga	8700
cctcttcca	aagtgtcaag	ctgtttctgt	ctggaatttg	gaaaagaaaat	tcttcactc	8760
tagttaatat	attcttgcc	tcaaagctta	actatTTTT	ctttttctt	ttttgagata	8820
atgactctga	acagcatcca	actgtacgtt	ttactgttgc	aaattcacta	ttgtaataag	8880
gaatagatgc	tctttatTC	catagcgtgt	aatatggagg	aaaacaattt	ttgttctatt	8940
tcacctagtc	acttgatcta	tcaaATcagc	acacagaaaa	ttaaAGcaga	tattcaagt	9000
gtccaatgca	aagggtttt	tttaattaaa	ataattccaa	aaagtaattc	ttccaatttt	9060

- 7/24 -

ctgctttgtg	agggtgacca	atttatgaac	tttcacattt	aaaaaacaca	aatgtctcca	9120
gagcggagat	agagttggta	aattctgaca	ctaaatatata	aatgtgacc	aaattatttc	9180
ttggggcctg	ttccctaata	taaaatcaga	ttgtattgat	ctgagttccc	ttctgattta	9240
tcttaaatta	gggaacatta	gtgtaagtca	gatgctctcc	cagagtttc	actaacctgt	9300
tcttggcgct	gttccaaagg	tgctccagag	aagctcctct	ggtagctgc	ctggggcca	9360
ctgagcaact	ggagattcct	gatgactgca	gctgccaggc	ctgcccagcc	actcccactt	9420
ttgctgacat	gatttatgct	tagcttgggt	agtatagacc	cattccctct	ctttctttct	9480
attacacttc	tttcctccct	tctggcttac	taccaatttt	ggagaagaagt	tcagtttttt	9540
tctttggtagc	aaatgttac	tgactgtaga	gccaaacttcc	acaccttatt	ggaaaaaaaaa	9600
ggatagacaa	atagtatttt	tgtgatttt	cagtagctta	aaactatagg	attttttttc	9660
cccattactt	tgcaacaact	gatacttttgc	accagttctc	ttcctaagc	atttctctcc	9720
ttgagctatt	acccaaatttgc	tcctagttct	tctctgcttg	tccctcagct	atagacagtc	9780
actgaggctc	tgtgettggc	ttatgttccct	ctctcctcat	agggattcct	cctgttggag	9840
ttcatcaagc	tacataggct	gaattatcat	tttatgact	ctagttgtga	ttactctcta	9900
ggaccacatt	tccctccctgt	aacacttcta	cctgggtact	ctttgagtagc	ttcaaaaata	9960
atgtatTTAA	ttactgaagt	tgtttttttt	ttgttttttg	ttttgttttg	tttttttgag	10020
atggagtctc	actctgttgc	tcaggctgg	gtcaatagc	acgatctcag	ctcaactgcaa	10080
cctccatgtc	ctgggttcaa	gcaattctcc	tgtcttagcc	tcctgagtag	ctgtgattac	10140
aggcacccgc	caccacgcct	ggctaatttt	tgtatTTTA	atagagaagg	ggttttcacca	10200
tgttggccag	gctggtctct	aactcctgat	ctcaggtgat	ccaaaccacct	cagcctcccc	10260
gagtgctggg	attacaggcg	tgagccaccg	tgcccagccc	tgaagtaatt	gtttaattaa	10320
aactttctct	ttttaactt	tctcattaa	gtatgtgaca	ccattgcttt	tctaagtccc	10380
tagtactgaa	actttatTTG	gttttagtcc	accgatctca	ccattcatta	gaaatgtaat	10440
gatttgcct	gccaaaaagc	ttctgcacat	caaaggaaac	aatcaacaaa	gtgaaaagac	10500
aatccataga	atgagggaaa	atatttgcaa	agtatctggc	aagagcttaa	taaccagaat	10560
atataagcaa	ctctgacaat	tcaatagcää	aaacaaaaca	aaaaacaaca	aataatctaa	10620
aaatggcaa	aagatctgag	cagacatttc	tcaaaagaag	acttacaaat	ggccaaacagg	10680
tatacggaaa	cattttcaac	atcactaatac	agataaatgc	aaatcaaaaac	cacagtgaga	10740
tatctcaccc	cagttgaat	ggcttttac	aaaaagatgg	aacaatagac	ggtagcgagg	10800
atgtggaaaa	aggggaactc	tagtatactg	ttgggtggaa	tgtaaattag	tatagccact	10860

- 8/24 -

aaggaaaaca atagggagtt cttcaaaaaa ctaaaaatag aactaccata tgatccagca	10920
attttattac tgggtatata tccaaaagaa aggaattaa tacattgaag aatatctgta	10980
ttccaatgtt tactgcagtg ctattcacaa tagccaaaat gtagaatcaa cctaagtgct	11040
gatttagtgga tgaatggata aagagaatgt agtatatatg cacaatgaca tattgttcag	11100
ctattaaaaa aaagtgaaat cctgtcattt gaaggaaaat ggaactggag gtcattatgt	11160
taaatgaaat aagccaagcc cagaaagacc aatatcacac gttctccttc atatatggga	11220
gctaaaaaca gaaaaaagtg aatctcatgg agctggagag tagatttgc gttatcagag	11280
gctgggaatg gtagcgtgga ggagggaatg aagagaggat gattaatgag gacaaatata	11340
cagttagttt ggaggaagac ctagtgcattt atagatcagt atggagacta tagttaacaa	11400
taatctactt gtacatttca atatgtacaa taattcacat gttcacagca taaagaggaa	11460
tgttaatgt ggtggatatt accctaactt gatatttaca cattatatga atgtatgaaa	11520
atatcaatgt actctgaaaa tatgtccatc tattatgtat taataaaaaa tataaggac	11580
acttactcgt atcaggcaca atatgtgccatc atgacatgga atgaaagagc aaataggtga	11640
ctggcactcc ctttccttcc acctctttc aatacttggc attgagtgga cacatggtgt	11700
tctagaggct gtgaagcccc ctttctttt tgtaattga cttccttaga gtctatctca	11760
aaacaacact tcagaagtca tgagggaaaa caagcataat tgtattgact ctttctat	11820
tttggatatt ctgaataact ctggatgca gaaaacttgt gaaaggcagt ttatttgaaa	11880
ttttccaaag acaaaaagga ataaaactgaa tttcctttt ttatataat agcgtagtt	11940
ctgtcagtct taagcaattt ctttacaaa gtgcaaattt ctgtgaattt agtcctttat	12000
tacaatattt gaggtttgtt tttacagcta agttgagcaa atgttacttt tactttgtaa	12060
agccttgtta tatcgccctag gttcaccagt caacttcatc acatttcca tatactggtg	12120
taatccaaaa taaaatttaa tatgatattt tttgcctgt gtataggtgt aggaaataaa	12180
tattgtttta cataggtaat gaatggttac taagtcaaga cacacttcct tttataaaaa	12240
aatgaaagaa atgtcttatt tttgttaat aggactttat taaggtataa tttatattaca	12300
gtaaaatact acaaatctt agtgtatgct gcatttaat ttgacaaat gtatatattt	12360
atgttaaccat catccagatc aagataaaga acatttattt atttatttat ttatattttt	12420
tgagacggag tcttgctctg tcgcccaggc tggagtgcag tggcgcgatc tcagctcact	12480
gcaagctcca ccgggggt tcacaccatt ctccctgcctc agcctcccgaa gtagctggga	12540
ctacaggcac ctgccaccac gccggctaa tttgttgcattttttat tagtgcata gacggggttt	12600
caccgtgtta gccaggatgg tctcgatctc ctgacccat gatccaccccg cctcggcctc	12660

- 9/24 -

ccaaagtgct gggattacag acgtgagcca ccgcaccccg gcctaaagaa catttcttta 12720
aattgtctgg tgtcttatca cccattctgc cctgaggcaa gcacagttct gattttcatt 12780
gccatagatg ggtgtcgta ttcagcttca cgtaaatggaa agcatactgt acacacttgg 12840
gactggctgc tttggcatac catggcattt ttgagacttt gagttctgtg catcatttta 12900
ttctatttct aattgtgtaa aagtacaccc ttgtatgagc ataataccaa tatgacttct 12960
atatggttcc tagtttaata tagttgattt ctgaatctgc aggagttgtg ctgttgtgt 13020
tgttgttgtt gttcgtttcc ttccctttca tcattgacac caggactcta gggtcgggt 13080
gttttgttg tttgttaatg ccctaggaac aataagaacc tgtcggttt ccattaagtg 13140
tccatttgat gacttgcata ttgggaaga gggaaatgtgt tccatgggggt ggaatctagg 13200
gatgttttac tatgccttg tttctagaag gatagtggaa ttgacctgct gaatggccaa 13260
gtggtatatt gcccatcttc tgtttaagg actatctgaa caagttccac catggcatcc 13320
attcctgctg ctgtttgat agctgtgatg ataaggtaga tgatccatct agtgcactga 13380
tttcttcaact ttactaacct gcttgcatac tctacccag ccactcactt ccatgagcag 13440
ttctggcct ttcagaggtg cttagcgtgg tgccagcatt gtaatattaa ttctaaagaaat 13500
cccatacttt gcctgctgcc tctttacatt tcacatgatt tgatgacaca tcacactgc 13560
tgctactgat tgtttctta ccatgttgag attacctatc catcagctac tgcttactat 13620
ctgctaagcc actggccttc ttgtctatgt gagatatcat ggtctactgc aataactgata 13680
cccttgaaga taccctcaat ttcttgctt tctcttcctc ttccataactc atctggcaaa 13740
tcccaactcc agttatttga gaaaattact caactgaggt gactggtttc actttaaatt 13800
caagatagaa aattcaaata gacaatcaag attgccaagc attcttaccc actataaggt 13860
ttgcctttct atttgatgaa ataactgctt tatactttct ttgcttacat gcccacatcc 13920
tgctttcgt agcccctcat tccccatagc tgatgacttc acttcattct tcaatgagaa 13980
gtaaaaagcc attggaaaga acaccctcat tattccacca accaatttat aaacttgtca 14040
atatcagtagc ctttctctcc ttttcctct tggtagtgg ataaagtctt ctatgtttca 14100
aagtcctatt ctctcttttgc ctcaagggtcc agtcatcacg ttgccagttg aatttagtgg 14160
accctttct ctctgaactc attttagctc tgagggtcat ttgacacaga ggactaccct 14220
gcttttattt tggaagacgc ttttcaatt ccacactctc ctgttattcc ttccacatca 14280
ctggatgctg cttctcagtc tcctttatgg acttcataatt ctctgtctta tatataaaga 14340
tgttagttct gcctagagaa ctacaactca cccaaagctt taaatatcat tttctcacgg 14400
tatattggag gccagacttag tttaggtcat taagttatat gttcttatttta cacatataca 14460

- 10/24 -

ttgtgtttta	atttcatgtc	atgtatcaca	tgtgacaaat	tatTTTGTG	gtactttctt	14520
tgttcaatgt	ctttatcctc	ttctggattg	tctgtagtgc	ccatcatgtg	tcctacatgc	14580
ctatcacaga	gcctggaatg	tagcagatgc	ccaatatttgc	cagaatgaat	gaattcata	14640
gtaagtgact	gaaagagttc	aacaaatgtt	agttctcttt	ccctttctca	tctcatattt	14700
acagaagaat	ggatacacca	gagttatgga	gtcagaagat	actactatca	gttctacaga	14760
agaaaagacaa	attcatggtg	tgatggatgt	taccagatgt	taaaaattat	ggaactgtta	14820
aaaattttgg	aactgctcat	agatacctcg	tacaggcagt	tggaaatata	gatctagago	14880
ttagtaaaaa	agtcatagtt	aaggacctgg	atcttcaaatt	tataaaattt	tatTTTTtat	14940
atctttaaa	atgtgtgtg	ttttgctcct	atgtgtttta	aaatggagga	aaagaggaca	15000
atgggattc	aggggtcaaa	tgccaggata	tgagacttac	agtgcatctg	gtaaaaatta	15060
aaatgattta	aactctgatc	tgattagaaa	aggtcagtct	tgaaaaagtt	ataaaggaga	15120
ttgtaacaca	aatacaatttgc	tatTTTCTTC	tctccttccc	catagtttt	gacaataaat	15180
cctaaggcaca	gatctgaggc	ttttttccct	agaaaaaaca	gaaaaatatc	cactcaaaca	15240
tagtagtcct	ccaaagtcat	ggtacatgaa	agtttatgag	agtttgggga	tctgatgaag	15300
ttaattatag	tcttacacct	ctggataaga	cccaaaagca	ttcaatttca	aacaaaggtc	15360
aggatagtt	agaaagtttt	atcacacgta	agcttgaact	caaacaatgt	tgcattaaat	15420
agtgacggc	cagtgagtgt	catatttcat	agctgtatca	gggacttaga	cttctttaga	15480
tcttctaaga	tcatatcaaa	aatactagta	tcctttgtt	tttaaaaaat	aatgagcat	15540
atTTTGTG	gcaaaactga	ataaaagaagg	ctaagattct	tgtctcctct	gaactatTTT	15600
gatctttata	agaagctact	ctgaggcagc	aaggctgttc	actgctcggg	cactgcgtgt	15660
atcatggggc	atTTCCCTG	agctgcagac	taacttctgc	gaagtactgg	gcatgttaac	15720
tttgcaaact	cagatttctt	tctacttaggg	tgataaaactc	atgtttctat	gaaataaaaca	15780
gtctccaggt	tcattagcag	atATGAGGA	gatcattagt	attaggagag	tcactagaaa	15840
aatcaagcaa	gaggagtgg	aggaatgtga	ggaagaacta	agctgaaaat	agtttctgt	15900
ccttccatg	gctgctggta	aatgtagcac	tgcactctgt	cccacaatttgc	aaggatttgt	15960
atTAATTCA	ggctttgagg	taaatgaatt	gctaatttgc	aaactgccc	tgtttgaaga	16020
tctctttgtc	actacttagc	ctatTTGTC	aaaaccaact	cctttaactt	ttaaaagtatt	16080
ttttttccct	tacataaaagc	accaaggcag	atgctaattc	atttataagc	ttttcttctc	16140
aacagtgaaa	tacagaaaaa	tcaatatcta	atggTTTTG	tgcaaagctc	agtaaataat	16200

- 11/24 -

agatttcatt ttccattctt aaaaacttgt gccatttagga agttgggaga ggaagattac	16260
tagcaattaa acaagaaaatg atggtaatgc tacaggcccc ccaaaaaagag tatcaagaaa	16320
tcaactatacg gtaataaaaaa taaactgtta catctgattt agggttagcag gcacaaaaaa	16380
ggtgacagct aatgcattgca acataccctct ctctgattct tcacaatttc acagttcttg	16440
ggcttgggg gatgtgtacg ttgatgtgtg taaacataat tcagatgagg attatgtttc	16500
agatctatttgc atctaagata ccctttcat gaataaccta agatatgaat ttttgggttg	16560
agtaaggcata aatgagagga ggttcttca tattttagct ttgtggatat aaactcagct	16620
tctccttatt actgttattt tattcggacta cttgaactat acagataatt tgcttatggc	16680
aagagctagg gattgggaca tattgtccca tataaatatt taaaatatat atttagatcg	16740
gcattgtcac cttggagacc agcagaaata agaagtataat tgcagatgag caaaattttg	16800
tcccgagaat atttgcttag ctcattagct gtttaggtat agtctagcta tgtatatgt	16860
gttgtatgca tagcttgta aatgcctact taaaatatta ctaaatcatt ttgtatata	16920
atttaaaaaa atccctgcct ggaaagtttt atggaatcca tttgtttatg ctccaagcaa	16980
agatatgtaa gtaacaacat caaatttagac tcaattcagt gacagttgct atagtttttg	17040
ccaaaatttt ttatttgagc acatgcaaattt ttctgaagaa ttacaaatgt gtaatttattt	17100
tacatgactt atttttgata gatattttt ttttaagtaga aaaatcacaa gtctatata	17160
ggatgaggat aatttataaa cctaataccca taaaattttt cgtcttcaga aatattctca	17220
tctcaagaat atctctttaa aaatacatgt aacattttaa tacagaataa aatacagaac	17280
gccaaaagct aggttaacttt ttgttctctt ttaaatgata atacaatcat tttgctaata	17340
aagttatttt tggaaatagtt ttgtcaaaa tagcaacaag cactaatgtt actcattgtt	17400
tattggctga gatcttcaca gaaattgtgt gctaaaaattt atcaggagaa caagggagg	17460
agctgtgtgt ggtattgagg aattctcatt tctgtcatgg gcaagagcaa cagttgctgc	17520
tgctacctat ccccagtaga gatacttatt tctctggcag gaagggtgat actctttcg	17580
ggactgctat gttaaagtgt attattgaca agtcaactg gaaataaaat ttattttcat	17640
tagaaaatac aagtggtcaa caaaagcttc tgccttttat tttcccccattt gttAACATAA	17700
aacaactttt tttttttttt gagacggggctt cttactctat cacccagtcggagtgact	17760
ggcttgagct tggctcaactg cagcttgac ttccagggct caagtgtatcc tcccaactca	17820
gtctcctgaa tagctgaaac tacaggcaca tgccaccaca ccagctgatttttgcatttt	17880
ttgttagagac ggggtttgc cacattgccc agactggct tgaactcctg ggctaaagca	17940
attttttttc ccccaccatg ttggcctccc aaagtgagtg ctgggattac aggcgtgagc	18000

- 12/24 -

- 13/24 -

gggactgtgc taagtgattt ccatacatta tcttaattt tctcagctgc cccatgagat 19860
atattaccat cttgatttta tcaatgatta tcgaacctaa gtagtccctt ctttgattgt 19920
tcacaatgta ctggatgc tggtgtatat tttagagtca taaattcatt tatacagtca 19980
ttatatttag aaaggccaat taacagagct ttcccggtga cacataaggg actgatattt 20040

actgtattcc atatgcattt tgatttttc taatatctat ggtattaata aaaggtatgt 20100
tactatctct gcataagact attgatgttg agtcaatgag taaacatgga gattaaacag 20160
actttacag tgaaccttat taaaataaga gttttattat tacattatg tacgctattt 20220
taaagtatat aggatatacagcagattt atttcttcta tactttggg aattgaaagg 20280
agagaaatga ataagactgt aaaagttgc ttcaataatct ttcaaatgc agtgtattaa 20340
aaaatataaa gttgaaaatt ttgggttttag ttaaatctct taaaacaaa tccaccttgt 20400
ttcccaaatt tttcttcaat ggaattaatt tctatgtttt gcctgctact cctcttaaga 20460
ggattgttagc tttcttagt caatgatgga tgctcttct aagttgtaa gcttatgttt 20520
atgtaaaaag tcaaatgcct ggctgcttat ctaagaaccc gcttcttac agattgatgt 20580
gaagaagcct agggaaaagg gagcccttaa tttcttaggag attagcttgt taagattgaa 20640
aatgcttc tgaactttta tatactgtaa cactaagaat aaaaacatata caatttata 20700
tcagggaaat gtaattattt atatttaatt tatgtatcct attatcaagt tttatttat 20760
ctagcttctg tagtgcttca atgggttgg ctgttatttt tggtaaaaat tgaatgacaa 20820
gtcatggaaa gtgaaggct tagagaaagt agctgaatga atatcataat aaaatggat 20880
atggattata attaatggaa aggagcagat aatttctttt ttgttagccaa gtaatagcta 20940
agttgatcat agtttcagga ttgccatttg tctggattt cttacagttt ctggggaa 21000
gggaggcact caaatggta aatagaagga agaactctga aaaggaagta tattttactt 21060
ccaaaatatt ttatcttct atatctgcat gtcaagggtgg gagcagttgg aaattcagac 21120
aaaacctcta cttcatttag attaattctg ggaaaaactc cttaaagtgtt aaccaaatta 21180
cttgagtgaa aaagtaggtc ttgttagaaag atatttattt tggagtgggt acatgtgcta 21240
aacatttcta atgaaaatag tagacactgg gtaaataat cattagttt agaacatttg 21300
cacagttcac taatctctaa tagttgatgg atgctatgaa gcacgttcac ttaagccagg 21360
acacacaaaa atgcctgcta gctgggttg tgaatttctc atctgattct gccaaatggc 21420
atttcaaaaa gggcaatctt atctttgtt aaatacagaa tagggagaac atgaatagaa 21480
agaggctcca cttgccagtc aaaccaagcg aggacagttg ggtagttaca gttgtttgc 21540
tacacgttct catacttgag gcaactaatt ctcggaaagac tggaaatgtga agcttttaga 21600

- 14/24 -

atcccttagt aactaatttc tgtcatgtgt gttgactgg tagaataagt ttttgacg 21660
aaatttggAAC attaatgggg ggaatgggtt attagctggt tttatattt tcaaggatta 21720
ctttcttcta atccttata gtccaaaatc tctaaaatat gtggaaagt actcagatta 21780
aagtggtttgc caattatgtg cctaagaagt tttgaaatg ttgactcatt tgataaaacg 21840
gtgtttcct ctatataatg tccatggata gtgaactgga gcaatgaggg tactggaga 21900
aatgccactg gcttttact gatattttt cttcttctt ggtgtttaa aacttctctt 21960
tttaaaagct catttactag aagcaggaat ctgaacaact tgactcttt aaaggggaga 22020
gatacagaaa agaagcagat ctgtactttc tagattctga gtcacatact ttaactttgc 22080
aactgaaggc aatttgggt tacattgata agtaaagcaa gtcttgtgag atagattggg 22140
tgccaatata tccattgaga gaggtagaat aatgccattg acacgtgaga atatattcca 22200
tagcacgtga gggaaaggaa tggggagtg tctgacttca atgcagatgg agggaaataag 22260
atcttagtggt gaccattttt attcaagaag taaatatacg ccacttagag gagaatataa 22320
aagataatct gtactgaaca caaaggaaaa aaggacctaa tatccgaaca aagaagaaaa 22380
tgtagcccac ctaaaggaga atataaaaga taatctgtac tgaccacaaa gaaagaaagg 22440
agctaataatc tgaacagtga gccaagatga ggaaggtgaa aagattgcag aaccagttt 22500
ggaacactac tgagcaggac aattttataa cattacagag gccactact tgagaaaacc 22560
tgttaatgga cctgataaaa cagtgtcgac aaggaataaa gcataattaa gtattaggtc 22620
ttttcatata gtaaaattaa catagttaa atcccttgc gcagcaattt gaactgcaca 22680
tgcataatata cacatccaaa atgaaatttt agagaaaaat tgtatcagat tggtgactca 22740
atcttgatt ctctaaatgg atttctcaaa agcacatgca cacacatgca taaatacatg 22800
caaataatata cacagccaca aattggaaag agagcagggc tgagcattag gtcaggtgt 22860
ttgtttatg tcacacacta cagtctaagg caaaaatatc tggctgactt ttctgttcca 22920
ttcggttgaat atcaagtggta taagaattaa ctaaagagaa gcctactttt gcttttttg 22980
aatggggtag ctattatgtg tcatattatt atcagtttt cttgtttt atcccagtca 23040
tttgggctaa agttaaagag ataaagacta agtgccttgc tgtgactgca gtagtggagg 23100
tgaaggagat tctaaagtcc tctctggtaa acattccacg ggacactgtc aacctctata 23160
ccagctctgg ctgcctctgc cctccactta atgttaatga ggaatataatc atcatggct 23220
atgaagatga ggaacgttcc aggttaattca ctctttaagg atacagaata actactttgc 23280
ttatcctact ctcattaaat ttgtctctag agatgcattt ctcgcatttt tacattggga 23340
tctgtctacc ttcttggggta ttacagataa gtttttagttg ggtttcttga tttcatatat 23400

- 15/24 -

ggaatgggtg tatgcgtgta gtttataagg t tacatttt cttggagag gggccataac	23460
ttcatttgtt tcttaaagg gtctgtgact tacaaatggt taataattac tgttctaaat	23520
cttagctgtc ctattcaaga ataaacatgt aagtcttct t gttcaagta ctgtttcctt	23580
gtactttca gtaacagggtt ttaattttc aaaaatgtt gttttttca aaaatacaga	23640
ttactcttgg t ggaaggctc tata gctgag aagt ggaagg atcgacttgg taaaaaagtt	23700
aaggtaagcc t gtttat tttat gtttgaagta atacacagaa aacaaaacaa aagtagaaaa	23760
ccagccatct gtcattgaaa t gaaatagct gccttcaacc atatgagaaa tattaaaatt	23820
tagtatgcat atatttat tttttttttt actccaagag ctgaatttgt cttaatgtc tatttttattt	23880
 aaggaatgag ttccctgtat gtgtatcaa gatctaacta cagttgcctt aatgtctttt	23940
cacaaggagt ctagctgtat tccagtcctg gtagggtggt ttcatgttgt caggctcctt	24000
ctagcttatac actctaccat ttttaaaggc atcgcttca tactcatgtt cacctggagg	24060
tcacaagatg gctgctgc ctctagtatc acatgtacat ttcaggcagg aaaaagagga	24120
ggtaaaaggg atttccaaga gcctcatcaa gcagtttttta cttagctgca aaacaggcta	24180
gaaaatgtat tttttttaaa cctggggata ttgcttcttt gaacaaactg cagtttgta	24240
gaaggggaga ataaatgatg ggaaggaaaa taaacaatga tgtccgatga ataaacagca	24300
attcctatgt acaaagtgt a gctacattca tctgtataga agagatctga ataaattagg	24360
tccttagagc agtaatgtat cttttttt aagccaaata actcttagat tgtggattt	24420
atacattttt taaaatcaca tagtacagta ctgtattata gaaggttttt gttttctta	24480
ctgcactaag caaatctgtt taaaagaaaa gaatgggtg ggggaatgca tggggggaca	24540
aaaaaatctc aaaggatgtg tgggtgggtg gggggagtgg gaactgtacc aaacataata	24600
catccttttc cttctgcaag tttgaaggct tggaaacat t tacatggta agttaaacac	24660
ccctggcgg tttatctt acatctggca cttgacacgg cagacacgtt tggtttaag	24720
tgacctacaa aatgttagag ggcatttattt tgtaaggaga aactaccctc cagtaagttc	24780
ttctccccctt cagtagattt gtcaaaagg agatgcattt caagttcaga cttgcggca	24840
ttctctctgc atctctttc aattagttt gtttttatta aagaaaaaag tggcttttgt	24900
tca gttatgtt ggaatctttt actgtcttta atttggttttt ctgcttgcta atgcagaact	24960
ggaatttgc taaaattcct gtaccagttg gaaaagctt caatatccct gctgcaagc	25020
atgttacaag gtttactgct cttttttgg taccaaaaca atatcattgt gttttgaca	25080
ggacacatgg cttgtttgc ctgtttccca ttgcttctg caatatttcc cattttttc	25140

- 16/24 -

cgcaggggac ttgcagagtt attattgtaa agtcatttat attctcagtc tggatttaaa 25200
tattctaaag gaaagaaaacc aataatttga acaattttaa attcatatgc agatatttag 25260
ggctaaagag tttgggtaga aaatctcctt tggccagaat tattgagatt cctattttag 25320
tttccagtc aatttgaaga tgtgtaaaaa gagttttatg gaggatgtt aattttcaat 25380
cagatttgct cttagctgag ttttgctctc agtggatgaa tcaataat tataagaaac 25440
attattatgt tttttcatg caaatggttg tttacctgag tctcttatacg cagacgattc 25500
aagatgtttg gtcttccttg ggaagtttag aatcagactg tttttaaaat atgaagacaa 25560
gattgtggag taaagaatac tgaaatgaag aattaccttc agtaacagaa aaacaataac 25620
acatttacta tgtgctaagc acatttatatt tttattaatc ttcatatgtt tctacttata 25680
agtagattct attatcagtt ccaacatata catgtgaaa atgaggtcta gtaagttcaa 25740
gaaacttcat acagtaagtg gtggagtttag aatttgaact tggccatct gaccaagga 25800
tctgatggtg cttgctctt aaagtgtggt ccctggatca gcaacatagg tatcacctgg 25860
gagcttgttta gtaatgaaaaa tcttcggccc tgtctcagac ctgctaaatg agaatttgc 25920
attttacaa attccccata tgatatccgt gtttgaagtt tgggaagtac agctgttagtt 25980
cgtattccct acctatcctc atgtaatata acttccattt aactttaatt acatgaaaat 26040
attattgaca ttgttaatat gaaatattac taaacttgat tgtgtttatt aaaaacattg 26100
ctaatacctg ctttgtaaca cttagaacga gggcaggacc ttgtctgtt tattcattgt 26160
acttagtgga tattacttag aaaaatattt ttgagacccc cccatccctc aaaaaattt 26220
ccatttttt ttcactgctc aaatcacata gactttaaaa ggctatgttc ttatgtgtat 26280
taagagagga ttttgaaaaa tagccttccc ttcaaattct gtgtgtaaat cttccatttg 26340
ttgagtatct gtgaagcact agcctcctgt atgttacctc aggaaatacc cagagatata 26400
gggagatatt tctgtcatca tttatagaca tggacatttt aagtttaagg tttgataaga 26460
aagcattact aaatacatta tagatgttgc gcttggtaaa gtcagagaat aatgttcata 26520
ttgcatcagt tttcttggta ccctggaaaa tagattgata cttttggaaa agtagcaaaa 26580
tgcttcagag atctgaacctt gcagtctgac ccagttgttta gaatcatgga aataatgacc 26640
ctgggtgatat gtgcttgcata ctatccata ttttaaattt cacagcgctg ggatatgaag 26700
cttcgtcatc ttggactcag taaaagtgtat tctagcaata gtgattccac tcagagtcag 26760
aagtctggca ggaactcgaa ccccccggcaa gcacgcaact aaatcccgaa atacaaaaaag 26820
taacacagtg gacttcctat taagacttac ttgcattgtt ggacttagcaa aggaaaattt 26880
cactattgca catcatattc tattgtttac tataaaaaatc atgtgataac tgattattac 26940

- 17/24 -

ttctgtttct ctttggttt ctgcttcct cttctctcaa ccccttgta atggtttggg	27000
ggcagactct taagtatatt gtgagtttc tatttcacta atcatgagaa aaactgttct	27060
tttgcataaa taataaaatta aacatgctgt taccagagcc tctttgctgg agtctccaga	27120
tgttaattta ctttctgcac cccaattggg aatgcaatat tggatgaaaa gagaggtttc	27180
tggtattcac agaaaagctag atatgcctta aaacatactc tgccgatcta attacagcct	27240
tattttgtta tgcctttgg gcattctcct catgcttaga aagttccaaa tgtttataaa	27300
ggtaaaatgg cagtttgaag tcaaattgtca cataggcaaa gcaatcaagc accaggaagt	27360
gtttatgagg aaacaacacc caagatgaat tatTTTgag actgtcagga agtaaaataa	27420
ataggagctt aagaaagaac atTTTgcctg attgagaagc acaactgaaa ccagtagccg	27480
ctgggggtgtt aatggtagca ttcttccttt ggcaatacat ttgatttgg catgaatata	27540
ttaatcagca ttagagaaat gaattataac tagacatctg ctgttatcac catagttttgc	27600
tttaatttgc ttccctttaa ataaacccat tggtaaaagt ctttttttt ctcttccttt	27660
aaaataaaatc agaattgccg tattgaccag gaaaagatta tgtatgcacg tgcaccaggg	27720
 ttagtttta aaagtacatg gctccataaa aatgctgttag attacagagt gataaaataat	27780
gcagggttttt ttgtttttgt tttttctgtt gtgtgtgtgt ctgtatttgt gtacatgtgt	27840
gtccttgcac tcacacccaa gggtgattaa aaatacaggc ctgcaaactg gcctgcactt	27900
tatcatttgg gatttgtgct gcttaatgct cagcgaaaaa tgtctagtaa aatgaattat	27960
ggtgtcagg agagaggtta ttgcacttt tgaaccaatt gcacattct cattacccaa	28020
gctgtggtga gatcccaggg gctgtggtga acaaatgatg ctttataga tggccctag	28080
cttacaatga ttcaatttac aatgcttcaa tttaacaatt tggactta caatgggttt	28140
atcagggtgt aacccaatgc atttcaactt acgatatttt cagttcgaa tgggttatac	28200
cagatgtaac cccatcgtaa atggcggagc atctgtactt ctttcctctg gcagagttcc	28260
ttagagcctg tgccaaattac ttgaaagttt cattctctgc cattacatg tgtgcttatta	28320
gtagaaccaa atttctaaagc tgtggcgtgc tgaaaataaa atgcttatga agcaaaaatc	28380
gtgtatgtt tccttctaca aggataatca agcaaggatg aaattcatc ctgaacaaaa	28440
gtttcctaaa atggtaaata atcatctatc taaatgttct attttaaaag tgtgagctgg	28500
gtgtgggtgag tgcacctgta atccccacta cttgggaggc tgaggaagga agacggctag	28560
agcccatgag gttgaagctg cagtaagcta tgattgcggc cactgtactc cagcgttaggc	28620
gatagagcat gaccctgtct ctgtacaac aacaaaagtg tgaaagttca ttctacaaat	28680
tggagtcaact catatcatac ccaactaaaa tggagttggg aggccatggg gaaaggcacc	28740

- 18/24 -

caggcccctg ttccaggaac cattttgca gttcaacaga aaaatcacga agacctaact	28800
ctaaccttaa gataaagtta cctagctgct gccactcacc aatcagaact tgcttagatcc	28860
tacaagacgc gcctgctcca gtgactttca ttcaaaaacca tntagatcac ctccctctct	28920
tccccaaataa aaccccagcc tttctctttg tctntgaaca caactagagg ctacactgg	28980
ttgtgtgccc agaattacaa ttccaattct tatattccca aataaaccct ttacttggag	29040
atttatctcc ctatatttaa aggtgacaga gtaagggAAC attcctgcct tctgattgac	29100
tctccaaagc caacaatttc cccagccccaa gaagaaaaaca ttcccacctt tgcttatagg	29160
actgcatagt cttttgagct tccaaaagac cacttccaaa gggcttgcca tctgcccatt	29220
tttgctatat tctcagatgg caaggacate tctttgagg tgctgatgtc ctacccttaa	29280
aaggtaggtt ggggtgtcaact ggggagtaat gaagcgccac cgtggatgga ctgcccctga	29340
gaatctctct tcctggatag taagcctcaa cttgagcctg aggacagagg ggtggaaagt	29400
agtgcgtggtg cctcagcctg ttttcctcag gctttctcac gttactctg taaagaagga	29460
caagaattga ctacaggaga ggtttaaagg aaccgttatac tcaaattccac aaacctcaac	29520
tctctcaatg cacagtaagc aatgttaagt aaggaactct tttgatgtat aaaagctgca	29580
gatgtttcca gtttctgcag tttttttgg ggggtggggg ttggtaaag gggtatgat	29640
cagttctgt gtaggaattt gacacacttt atgcttaata taaacaaaac acggccagat	29700
tcttagattc agcagttttt tttttttta aaccaccttc cattcggtgc cattttacaa	29760
cctactgttt taccactacc atctatagtg gcaatgtttg atttgctca cctatatgag	29820
gcttctgtca gctgttaaa catttctaat ggtataaagc ccatgaataa agtacattt	29880
gtttttcagt ttgatagcta caatatctc attaataaac tgtgcagacc tctttggga	29940
ggatggcgtg atttatcatg atggtcacgt ttctcaggag actgcaaaaac catttctact	30000

<210> 2
<211> 2058
<212> DNA
<213> Homo sapiens

<400> 2	
gttgggaaag agcagcctgg gggcagggg cggtggctgg agctcggtaa agctcggtgg	60
accccatgg gggatttga tccaaaggaaag cggtgattgc cgggggagga gaagctccca	120
gatccttgtg tccacttgca gggggggagg cggagacggc ggagggggcc tttggcgtc	180
cactgcgcgg ctgcaccctg ccccatcctg cgggatcat ggtctgcggc agcccgaggag	240
ggatgctgct gctgcggggcc gggctgcttg ccctggctgc tctctgcctg ctccgggtgc	300

- 19/24 -

ccggggctcg ggctgcagcc tgtgagcccg tccgcattccc cctgtgcaag tccctgcctt	360
ggaacatgac taagatgccc aaccacctgc accacagcac tcaggccaac gccatcctgg	420
ccatcgagca gttcgaaggt ctgctggca cccactgcag ccccgatctg ctcttcttcc	480
tctgtgccat gtacgcgccc atctgcacca ttgacttcca gcacgagccc atcaagccct	540
gtaagtctgt gtgcgagcgg gcccggcagg gctgtgagcc catactcatc aagtaccgccc	600
actcgtggcc ggagaacctg gcctgcgagg agctgccagt gtacgacagg ggcgtgtgca	660
tctctcccga ggccatcggtt actgcggacg gagctgattt tcctatggat tctagtaacg	720
gaaactgttag aggggcaagc agtgaacgct gtaaatgtaa gcctatttgc gctacacaga	780
agacctattt ccggaacaat tacaactatg tcattcgggc taaagttaaa gagataaaga	840
ctaagtgcctt tgatgtgact gcagtagtgg aggtgaagga gattctaaag tcctctctgg	900
taaacattcc acgggacact gtcaacctct ataccagctc tggctgcctc tgccctccac	960
ttaatgttaa tgaggaatat atcatcatgg gctatgaaga tgaggaacgt tccagattac	1020
tcttggtgga aggctctata gctgagaagt ggaaggatcg actcgtaaaa aaagttaagc	1080
gctggatata gaagcttcgt catcttggac tcagtaaaaag tgattcttagc aatagtgatt	1140
ccactcagag tcagaagtctt ggcaggaact cgaacccccg gcaagcacgc aactaaatcc	1200
cggaaatacaa aaagtaacac agtggacttc ctattaagac ttacttgcatt tgctggacta	1260
gcaaaggaaa attgcactat tgcacatcat attctattgt ttactataaa aatcatgtga	1320
taactgatta ttacttctgt ttctcttttgc ttctctgcatt ctctcttctc tcaacccctt	1380
tgtatggtt tgggggcaga ctcttaagta tattgtgagt ttcttatttc actaatcatg	1440
agaaaaactg ttctttgca ataataataa attaaacatg ctgttaccag agcctctttg	1500
ctggagtctc cagatgttaa ttactttct gcaccccaat tggaaatgca atattggatg	1560
aaaagagagg ttcttggtat tcacagaaag ctagatatgc cttaaaaacat actctgccga	1620
tctaattaca gccttatttt tttatgcctt ttggcatttc tcctcatgct tagaaagttc	1680
caaatgtta taaaggtaaa atggcagttt gaagtcaaatt gtcacatagg caaagcaatc	1740
aagcaccagg aagtgtttat gaggaaacaa caccaagat gaattattt tgagactgtc	1800
aggaagtaaa ataaatagga gcttaagaaa gaacattttg cctgatttag aagcacaact	1860
gaaaccagta gccgctgggg tttatgggtt agcattctc tttggcaat acatttgatt	1920
tgttcatgaa tatattaatc agcatttagag aaatgaattttaaactagaca tctgctgtta	1980
tcaccatagt ttgtttaat ttgcttcctt ttaaataaaac ccattggta aagtcccaa	2040
aaaaaaaaaaaa aaaaaaaaaa	2058

- 20/24 -

<210> 3

<211> 23

<212> DNA

<213> Homo sapiens

<400> 3

atagtaggag gagtactgtg tcg

23

<210> 4

<211> 24

<212> DNA

<213> Homo sapiens

<400> 4

aatagtagga ggagtactgt gtca

24

<210> 5

<211> 24

<212> DNA

<213> Homo sapiens

<400> 5

ccctgtggac tatcacctaa tgtt

24

<210> 6

<211> 18

<212> DNA

<213> Homo sapiens

<400> 6

ataggccatc agttgtgc

18

<210> 7

<211> 19

<212> DNA

<213> Homo sapiens

<400> 7

cataggccat cagttgtgt

19

<210> 8

<211> 21

<212> DNA

<213> Homo sapiens

<400> 8

tcaaagtgct ctgctgttca c

21

<210> 9

<211> 22

<212> DNA

<213> Homo sapiens

- 21/24 -

<400> 9
gatcttattt cctccatctg ct 22

<210> 10
<211> 21
<212> DNA
<213> Homo sapiens

<400> 10
atcttatttc ctccatctgc a 21

<210> 11
<211> 20
<212> DNA
<213> Homo sapiens

<400> 11
cgtgagggaa aggaatgttg 20

<210> 12
<211> 22
<212> DNA
<213> Homo sapiens

<400> 12
ttgtctttta tcccagtcat tc 22

<210> 13
<211> 22
<212> DNA
<213> Homo sapiens

<400> 13
ttgtctttta tcccagtcat tt 22

<210> 14
<211> 25
<212> DNA
<213> Homo sapiens

<400> 14
catcatggca cttagtcttt atctc 25

<210> 15
<211> 26
<212> DNA
<213> Homo sapiens

<400> 15
aaaaatgtaa acctataaac tacacg 26

<210> 16

- 22/24 -

<211> 27
<212> DNA
<213> Homo sapiens

<400> 16
gaaaaatgt aacctataaa ctacaca

27

<210> 17
<211> 25
<212> DNA
<213> Homo sapiens

<400> 17
tcttgatttc atatatggaa tgggt

25

<210> 18
<211> 26
<212> DNA
<213> Homo sapiens

<400> 18
acagtacttg aacaagaaaag acttat

26

<210> 19
<211> 26
<212> DNA
<213> Homo sapiens

<400> 19
acagtacttg aacaagaaaag actttac

26

<210> 20
<211> 28
<212> DNA
<213> Homo sapiens

<400> 20
actgttctaa atcttagctg tcctattc

28

<210> 21
<211> 22
<212> DNA
<213> Homo sapiens

<400> 21
ctcccttttg acaaatctac tg

22

<210> 22
<211> 23
<212> DNA
<213> Homo sapiens

<400> 22
tctccctttt gacaaatcta cta

23

- 23/24 -

<210> 23
<211> 25
<212> DNA
<213> Homo sapiens

<400> 23
gaaactaccc tccagtaagt tcttc

25

<210> 24
<211> 17
<212> DNA
<213> Homo sapiens

<400> 24
ttcgggattt agttgcg

17

<210> 25
<211> 17
<212> DNA
<213> Homo sapiens

<400> 25
ttcgggattt agttgcc

17

<210> 26
<211> 20
<212> DNA
<213> Homo sapiens

<400> 26
gtctggcagg aactcgacc

20

<210> 27
<211> 18
<212> DNA
<213> Homo sapiens

<400> 27
tgggggcaga ctcttaag

18

<210> 28
<211> 18
<212> DNA
<213> Homo sapiens

<400> 28
tgggggcaga ctcttaaa

18

<210> 29
<211> 27
<212> DNA
<213> Homo sapiens

- 24/24 -

<400> 29
catgattagt gaaatagaaa actcaca 27

<210> 30
<211> 23
<212> DNA
<213> Homo sapiens

<400> 30
gactgaagaa gtcaagttt agt 23

<210> 31
<211> 22
<212> DNA
<213> Homo sapiens

<400> 31
actgaagaag tcaagtttga gg 22

<210> 32
<211> 21
<212> DNA
<213> Homo sapiens

<400> 32
tgaacagcag agcactttga t 21

<210> 33
<211> 20
<212> DNA
<213> Homo sapiens

<400> 33
gtcgccatttc ttatcattca 20

<210> 34
<211> 18
<212> DNA
<213> Homo sapiens

<400> 34
cggcattttt atcattcg 18

<210> 35
<211> 25
<212> DNA
<213> Homo sapiens

<400> 35
aataagtctc atccataactc aaccc 25